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HENRY JACOB BIGELOW

A Biographical Sketch

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A Biographical Sketch

HENRY Jacob Bigelow was born in Boston, Massachusetts, March 11, 1818. He was the son of Dr. Jacob Bigelow and his wife, Mary Scollay Bigelow.

The senior Bigelow (1787–1879) was the third of that name in lineal succession, and he came from old New England stock. Graduating from Harvard in 1806, he received his degree of Doctor of Medicine from the University of Pennsylvania in 1810. For nearly 50 years thereafter he was Professor of Materia Medica in the Medical School of Harvard University, and also, for a long period, Rumford Professor of the Application of Science to the Useful Arts, in the Academic Department of the same University. He was president of the American Academy of Arts and Sciences from 1846 to 1863, and a member of other prominent associations in this country and abroad. He was the author of many botanical and medical works of value, and of addresses and essays on educational and kindred subjects. He conducted a large medical practice in Boston, and he was highly esteemed for his virtues and for his wisdom. The wife of Dr. Jacob Bigelow has been described as possessing, in addition to her womanly virtues and gentle nature, great strength of character. For those who believe in the hereditary transmission of unusual qualities, this sketch concerning the parents of the subject of this memoir may be of interest.

After preparation at the Boston Latin School, young Bigelow entered Harvard College, and graduated in the class of 1837. Associates of his youth have testified that, even at that period of his life, he gave evidence in many directions of marked ability, both physical and mental.

He began his medical education with his father, and later he was house surgeon in the Massachusetts General Hospital. After this he sailed for Europe, coming home to receive his medical degree (in 1841), but returning soon again to Europe to continue his studies. He spent three years there, principally in Paris, crossing the channel frequently to attend the lectures of Sir James Paget in London; for an intense interest in surgical pathology, gross and microscopic, manifested itself early.

On returning to America he was made instructor in surgery in the Tremont Medical School, succeeding Dr. Reynolds. This school was finally united to the

Medical School of Harvard University, in which, in 1849, he was appointed professor of surgery.

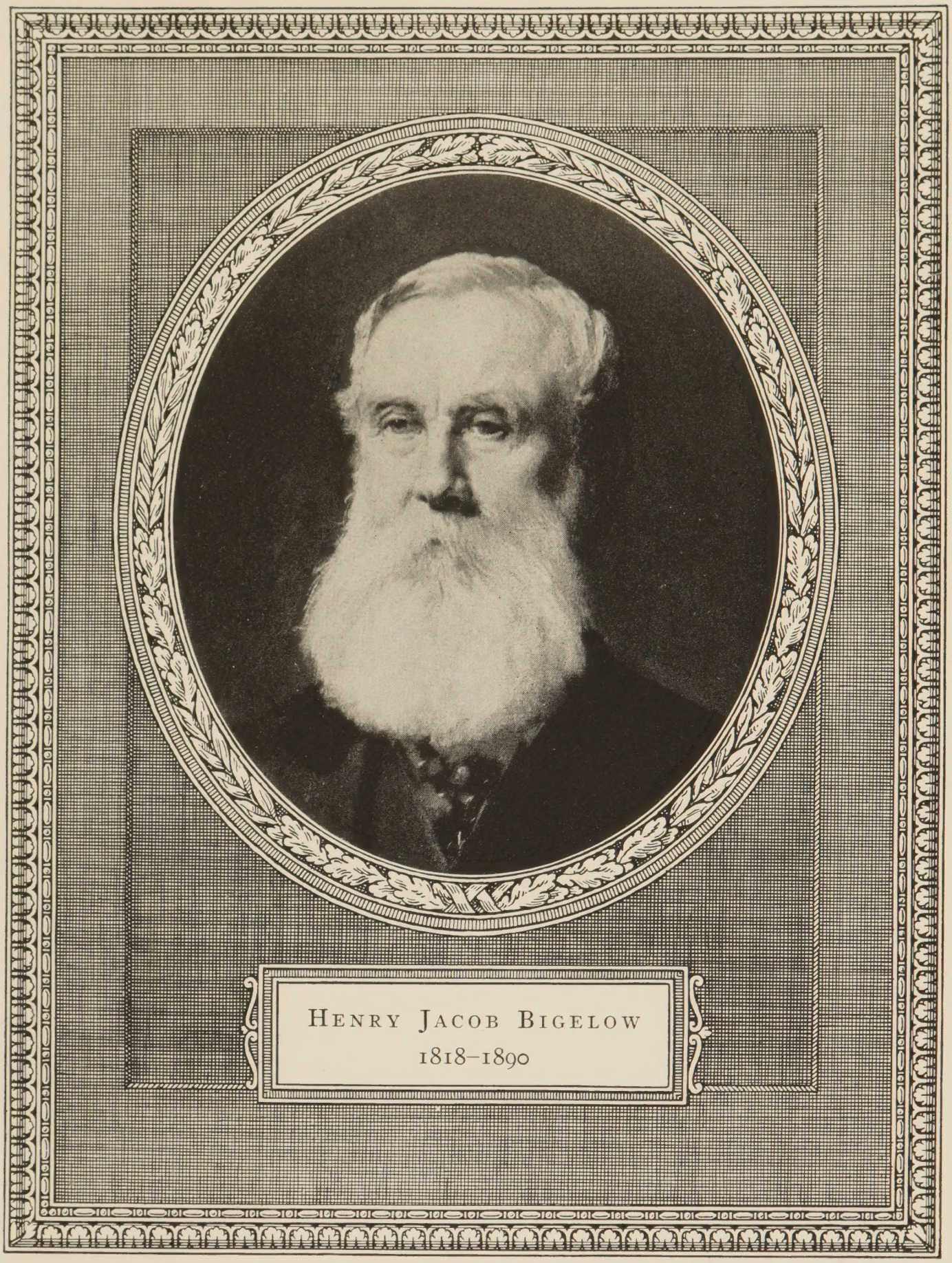
Coming fresh from Europe, saturated with what were then the latest medical and surgical ideas, he became at once a prominent figure in his chosen profession. In 1846 he was appointed surgeon to the Massachusetts General Hospital; and, about this time, his long career of professional activities and usefulness, which included many contributions to the advancement of surgery, began. Within a few months after he received his appointment to the Hospital, the anæsthetic effect of ether inhalation was successfully demonstrated there by Dr. William T. G. Morton on one of Dr. J. C. Warren's patients; and Dr. Bigelow, recognizing at once that the anæsthesia was "safe, certain and complete," and realizing "with almost prophetic appreciation," its enormous usefulness to the human race, took steps forthwith to announce to the world the great discovery, and to champion its cause, the result being that the use of ether, as a means of producing unconsciousness during surgical operations, was adopted far and wide. It has been said: "Dr. Bigelow's own aversion to giving pain must often have caused him to look back with peculiar pleasure upon his share in alleviating surgical suffering."

On May 8, 1847, Dr. Bigelow was married to Susan, daughter of Hon. William Sturgis, of Boston. She died, however, in 1853, leaving an infant son, who, born in 1850, is now Dr. William Sturgis Bigelow, of Boston.

A persistent *investigator* of surgical problems, Dr. Bigelow directed upon them the full force of his extraordinary powers of scientific analysis, and his intuitive knowledge of applied mechanics.

His first important investigation, upon which he spent a number of years (1861–1869) was upon dislocation of the hip. It was while studying the mechanics of this injury that he discovered and described the iliofemoral (the "Y") ligament, and saw clearly the significance of the control which it exercises over the head of the femur during, and after, dislocation. He saw clearly how he could utilize this control in causing, by manipulation alone, the displaced head of the bone to return to its socket along the same route it had travelled during the act of dislocation. His advocacy of this intelligent method of reduction, in place of the complicated, painful and unsuccessful method of horizontal traction by ropes and pulleys, which, inherited from England, had been hitherto in vogue, marked a long step in advance in the treatment of hip dislocations; and the publication of these facts was sufficient alone to entitle Dr. Bigelow's name to a prominent position in the history of surgery.

Dr. Bigelow's analytical and practical mind was applied to many other problems connected with surgery and surgical practice; and it really seemed that every subject he touched was bound to be elucidated, the result of his work marking a definite advance in that line. It is probably fair to say that no surgeon



HENRY JACOB BIGELOW
1818–1890

of his time, at least in New England, made so many contributions to surgery or introduced so many improvements as Dr. Bigelow.

The result of his investigations in the operative treatment of stone in the bladder was hardly secondary in importance to his work on hip dislocation, and it gave him a world-wide reputation. In those days lithotomy had a far higher mortality rate than it has today; and, while there was some difference of opinion as to the relative merits between lithotomy and lithotrity, the latter operation was usually preferred when, in any given case, it actually came to a choice. Dr. Bigelow, however, was so much impressed with the high mortality following the crushing operation that he studied the matter with great care, and finally reached the conclusion that this high rate was not due to instrumentation, but rather to the presence in the bladder, after each operative sitting, of sharp and angular fragments of stone, resulting in direct injury to the walls of the bladder, and to a dangerous cystitis, not to speak of the inevitable pain and suffering for the patient. This was a most important discovery, and constituted a real intellectual triumph! He therefore concluded that the stone, or stones, should be removed *at one operation;* for, by this procedure, the bladder walls would not be damaged by the stony fragments left after the operation, and infection would not be so apt to follow.

Having demonstrated the tolerance of the bladder for prolonged instrumental interference, he devised a method for removing the stone or stones at one operation, after they had been crushed into small fragments by the lithotrite. This was done by alternately flushing the bladder with water through a large urethral tube —generally a straight one—and then partially emptying it again. To this tube was attached a capacious rubber bulb, with a catch-basin to receive the fragments removed from the bladder with the outgoing stream. He gave the name of "litholapaxy" to this operation, a procedure which became in those days the best operative treatment available for these troublesome cases, and one which still has its advocates. He spent years in studying the details of this operation, during which he perfected the necessary instruments, which, I believe, are in use today.

The publication of this operation developed sharp criticism in this country and in Europe, assertions being made that his methods had already been used by others, and further that it was questionable whether, after all, they represented a real advance over those of the old operation. The controversy raged for years, until finally Dr. Bigelow was invited to open a discussion at the International Medical Congress which took place in London in 1881.[1] After twice declining this invitation he finally accepted it, and his ingenious method of demonstrating the operation, by means of an artificial bladder, was so convincing that his methods were generally accepted as representing a genuine and important contribution to surgery. In a private letter to Dr. Bigelow, John Eric Ericksen,

[1]Bigelow, H. J. "Modern Lithotrity." Tr. Internat. M. Cong., London, 1881, vol. ii, pp. 292-306.

president of the Surgical Section, wrote: "Your operation is the first real advance in the treatment of stone since Civiale perfected his system of lithotrity."

As a *reader*, Dr. Bigelow was not "omnivorous," and yet, when seeking information, especially along lines of his investigation, he would, as Dr. Oliver Wendell Holmes said of him, "get what he wanted out of a book as dexterously, as neatly, as quickly as a rodent will get the meat of a nut out of its shell," and also, in referring to his originality, that, "he took life at first hand, and not filtered through alphabets."

As a *writer* his publications were not numerous, but they seldom failed to add something new and useful to the surgical information and practice of the day. No article written by him failed to excite attention; and the marked interest in his writings on surgical practice, especially in New England, was far reaching.

As a *teacher* he was pre-eminent. His dignified, impressive personality, his concise and forceful language, his humor, his wit, his interesting, and picturesque illustrations, never failed to make their deep and lasting impressions on the students who crowded his clinics. He had, in a marked degree, the ability of impressing his students with just the information he wished them to remember. Dr. Reginald Fitz said of him that "his lectures were models of condensed thought and applied knowledge."

He was professor of surgery, and professor of surgery emeritus, for more than 40 years. So great was his influence it might almost be said that, during his professional career, he founded in New England *a school of surgery;* and the effect of his teachings is felt here today, even by surgeons, who had not the privilege of attending his lectures. Tall, handsome, magnetic and commanding, compelling respect and attention, he was a natural teacher and a leader of men; and he impressed his personality upon everyone with whom he came in contact.

As an *operator* he was calm and self-possessed, with quickness of observation and decision, and with great manual dexterity and grace, although it goes without saying, that the rapid operating, which conditions in those days seemed to require, and the imperfect asepsis then in use would hardly meet with approval today. Dr. David W. Cheever said of him that "to see him operate was to recognize a master."

It is but natural, however, that, in spite of his remarkable insight into surgical problems, and his numerous achievements resulting from it, he should toward the end of his life have failed to foresee the extraordinary results which were to follow the development of the antiseptic system. He was at this time rather inclined to look askance at many of the new operations, and even to consider them unjustifiable. If this revolution in operative methods had come earlier in his career, when his powers were at their height, he would probably have seen more clearly.

The sphere of Dr. Bigelow's activities, outside of surgery, was a very broad one. Lack of space prevents even the enumeration of the many subjects upon which his careful attention was directed during his life. He was always original, and his mind seemed ever on the search for possibilities of improvement. He left his mark of genius upon everything he touched.

In addition to his other gifts Dr. Bigelow was a highly cultured person, and, being most favorably placed as to social environment, he improved his opportunities to become familiar with all that is best in the fine arts. He was a regular attendant at the Boston Symphony Concerts, and he was for many years an influential member of the Board of Trustees of the Boston Museum of Fine Arts.

He resigned his professorship in the Harvard Medical School in 1882, and his position as surgeon at the Massachusetts General Hospital in 1886, to both of which institutions he had rendered eminent service. After retiring from his professional activities he led a quiet life at his country home in Newton, Massachusetts, until his death, October 30, 1890, at the age of 72 years.

GEORGE H. MONKS.